

ROTOR TYPE SPRINKLER WITH TURBINE OVER-SPIN PREVENTION

ABSTRACT OF THE DISCLOSURE

A sprinkler includes a riser having a lower end for receiving a pressurized fluid and a nozzle that is mounted at an upper end of the riser for rotation about an axis. A turbine is mounted for rotation inside the riser. A drive mechanism connects the turbine to the nozzle so that rotation of the turbine by the pressurized fluid rotates the nozzle. The sprinkler includes mechanisms for preventing over-spinning of the turbine when the pressurized fluid is air or a mixture of air and water. Damage to the turbine drive shaft or its bearings due to over-spinning of the turbine is thereby avoided. In one version of the sprinkler, the over-spinning prevention mechanism applies a brake force to the turbine. In another version of the sprinkler, the over-spinning prevention mechanism re-directs air or a mixture of water and air around the turbine.